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What is claimed is

CLAIMS:

1. A method for the microwave extraction of at least one natural product from a biological material, said method consisting in:

- placing said biological material in an enclosure without any solvent,
- making said biological material present in said enclosure undergo microwave irradiation in order to prompt the evaporation of at least a part of the water contained in said biological material and, consequently, the splitting up of the cellular structures of said biological material so as to enable the release of at least a part of said natural product,
- separating the residual biological material from the extracted natural product,

5 10 said method being characterized in that it comprises the following complementary steps consisting in:

- intermittently applying reduced pressure within said enclosure during said step for the application of microwaves in order to further the splitting up of the cellular structures of said biological material induced by the application of the microwaves,
- heating said enclosure during at least the essential part of said step for the application of microwaves, in order to compensate for the drop in temperature resulting from the evaporation of water from the biological material,

15 20 the combination of said steps for the application of the microwaves, the application of reduced pressure within the enclosure and the heating of the enclosure permitting the hydro-distillation of said natural product by the conveying of this product in the water vapor coming from said biological material.

2. Method according to claim 1, characterized in that said step consists in subjecting the interior of said enclosure to pressure-reduction cycles.

3. Method according to one of the claims 1 or 2, characterized in that said step for the separation of the residual biological material from the extract consists in:

- refrigerating the water vapor containing said extracted natural product,
- decanting the liquid mixture resulting from such refrigeration, and
- separating said extracted natural product and the water resulting from such a decantation.

25 30 4. Method according to claim 3, characterized in that at least a part of said

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water resulting from said decantation step is injected into the enclosure to carry out the hydro-distillation of the natural product remaining in said residue of biological material.

5 5. Method according to one of the claims 1 to 4, characterized in that said heating step is conducted at a temperature lower than 100° C.

6 6. Method according to one of the claims 1 to 5, characterized in that the microwaves used during said step of microwave irradiation have a frequency at least equal to 300 MHz.

7 7. Method according to one of the claims 1 to 6, characterized in that said step of microwave irradiation is conducted so as to apply power ranging from about 100 W to about 10,000 W per kilogram of processed product.

10 8. Method according to one of the claims 1 to 7, characterized in that said step of microwave irradiation is conducted under the mechanical stirring of said biological material.

15 9. Installation for the implementation of one of the claims 1 to 8, characterized in that it comprises:

- an enclosure (1) provided with means to generate microwaves (2) within said enclosure (1) and having a thermostat-controlled double wall (3);

- heating means (4) enabling the temperature of said thermostat-controlled double wall (3) to be regulated;

20 - means (5) enabling the pressure inside said enclosure to be reduced;
- means (6) to recover the extract when it comes out of said enclosure.

10. Installation according to claim 9, characterized in that said means (6) for recovering the extract comprise refrigeration means (7).

11. Installation according to claim 9 or 10, characterized in that it has means (8) to bring about the operation of said means (5) enabling the pressure within the enclosure to be reduced cyclically.

12. Installation according to one of the claims 9 to 11, characterized in that said enclosure is provided with stirring means (9).

13. Installation according to one of the claims 9 to 12, characterized in that it comprises means (10) enabling the rerouting of the residual water obtained at said means

for the recovery of the extract from within said enclosure (1).

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